having approved of the design for the bridge over the Loir, at Fiddown, Mr. Dargan has undertaken the contract, and the works are three parts completed. This bridge, with embankments, will be 800 feet long. Mr. G. W. Hemans is engineer in chief.

ELECTRO-TELEGRAPHIC PROGRESS.

We have already mentioned that the East-India Company are about to introduce the electric telegraph through all the principal districts of their vast possessions: they have entered into a contract with Messrs. Morewood and Rogers for the supply of no less than 3,000 tons of patent galvanised wire for this purpose. The shipment of the wire is to commence in October next, and the whole length of telegraph (about 6,000 miles) is expected to be in action within two years from this time. The posts are to be simple bamboo, placed in iron screw-pile sockets, and well insulated at the top.

A report by the managers of the Submarine Telegraph Company between France and England, presented at a meeting held at No. 10, Place de la Bourse, Paris, on 6th inst. states that the revenue account, after payment of all expenses properly chargeable under that head, gives a net disposable balance of 2,031*l.* 11s. 9d. admitting of the declaration of a dividend, for the six months ending 30th June last, of a sum equal to 5*l.* per cent. per annum on the capital of the society, and leaving a surplus of upwards of 200*l.*;—that earnings of the line have been unduly taxed by payments for the transmission of the society's messages between Dover and London; and that had such payments, during the past six months, been made as by the future agreement, the disposable balance would have been increased by 1,133*l.* 15s.; and the dividend to the 30th June would have been, with precisely the same amount of traffic, at the rate of 8*l.* per cent. per annum in lieu of 5*l.* The amount paid to the South-Eastern Railway Company is said to have been 2,369*l.* 12s. 3d.; and amount that would have been paid under the provisions of the subsequent land agreement, 1,235*l.* 17s. 3d. The managers next advert to a proposed agreement between the society and the "Submarine Telegraph Company between Great Britain and the Continent of Europe," lately established in London under Royal Charter. A provisional agreement had been entered into by the managers with the chartered company, for an equal division of the traffic receipts, and for a joint management of the two undertakings; such agreement to take effect from the opening for the public transmission of messages of the Belgian line, and to continue in force during the existence of the two concessions or of either of them, or until a more complete amalgamation of the companies can be effected. The managers confidently anticipate that a dividend of from 8*l.* to 10*l.* per cent. will be immediately realised on the capital of the two companies. They report that the cable between Dover and Calais is in every respect as perfect as the day on which it was laid down.

Notices of Books.

A History of British Birds, indigenous and migratory; including their Organization, Habits, Relations, &c.; illustrated by numerous Engravings. By WILLIAM MACGILLIVRAY, A.M. LL.D., Professor of Natural History, &c. in Marischal College and University, Aberdeen; Member of the Wernerian Natural History and Royal Physical Societies of Edinburgh, &c. Vols. IV. and V.

The study of natural history, and especially of that beautiful portion of it which relates to the feathered creation,—God's builders, as they may well be denominated,—tribes, as they are, of ever-varied splendour, bearing, to the animal world, much the same relation that the flowers do to the vegetable,—constitutes a recreative interval from the cares and toils of professional life, of the most refreshing description; and especially so with a philosophical and reflective as well as experienced mentor to guide us, such as Dr. Macgillivray is well known to be.

The present volumes complete his elaborate work on British birds, a work without a prototype, and which must constitute the basis on which all future acquisitions to the British ornithologia must be founded.

There is a quaint intermixture of technical lore and reflective sagacity in these volumes, which renders them amusing as well as instructive, whether the reader be a lover of birds or not. An author who is an enthusiast in his work will seldom fail to meet with readers who will feel a sympathetic interest in perusing what he has written. Much of what is here presented is necessarily technical and dry in itself, but it is so mingled with racy thought and curious comment that it all goes down, leaving a relish behind it anything but unpleasant. Here is a slice or two which our readers may "taste and try before they buy:"—

"Some persons have moralized on the cunning of birds. They cannot believe that they should naturally possess any instinct leading them to acts such as in men are accounted evil. But a rational being and an instinctive animal have no moral affinity. Why should not animals use stratagem in defence of themselves or their young? Is cunning a greater crime than murder? And yet who finds fault with an eagle for tearing a lamb to pieces but the shepherd and his master; or with a lion for devouring a Boojesman or a Dutch Boor, but other Boojesmen and Boors, who may dread the same fate? If a myrmeleon digs a pit, and lies in wait to seize and devour the unhappy insect that has fallen into it, do not men—moral men—make pits to entrap elephants, hyenas, wolves, and other beasts? Who blames the fisher for his practices, although his whole art is a piece of mean deceit? He lets down into the dark sea a web of cord, and persuades the silly herrings that there is nothing in their way. He busks a pointed and barbed hook, casts it on the water, and says to the trout,—'There's a nice fat fly for you!' He impales a sprawling frog, and, letting it down the stream, pretends to attend to the comfort of the hungry pike, who is not insensible of his good fortune until he feels the steel points thrilling his pneumo-gastric nerves."

Or again, as in dwelling on the habits of the common ring-plover:—

"Were I to describe," he says, "the manners of this gentle creature, under the influence of the delightful emotions which the view of it has often excited in me, I should probably appear to the grave admirer of nature an enthusiast, or an imitator of other men's musings. Well, let him think as he lists; but yet lives there the man, calling himself an ornithologist, who, quietly strolling along the bright sandy beach, just left bare by the retiring tide, and aroused from his pleasing reveries by the mellow whistle of the ring-plover, would not gaze with delight on the pleasant little thing that speeds away before him with twinkling feet, now stops, pipes its clear cry, runs, spreads its beautiful wings, glides close over the sand, and alights on some not distant tuft. What are primaries and secondaries, concums and deodenums, types and analogies, squares or circles, to him who thus watches the living bird? There is the broad blue sea; on that hand the green pasture; under foot, and around, the pure sand; above, the sunny sky. Frown not upon the cheerfulness of nature: shout aloud, run, leap, make the sand-lark thy playmate. Why mayest thou not be drunk with draughts of pure ether? Are the gambols of a merry naturalist less innocent than the mad freaks, the howlings, the ravings of sapient men assembled to deliberate about corn-laws, or party zealots upholding their creed by palpably demonstrating their total want of charity?"

Who would imagine that at the moment when so seemingly light-hearted a paragraph was written, the author felt the heavy hand of death upon him? Yet knowing the circumstance, it enables us to see even in this paragraph a touching consciousness of the peril which stood between him and the innocent gaiety he so forcibly depicts. The author calmly refers, in other passages, to the near approach of death; and since the preparation of this notice of his last labour, we grieve to have it announced that the author died, at his house in Aberdeen, on Sabbath week. Dr. Macgillivray, as remarked by the *Morning Herald*, "was the author of many works on natural science, besides biographies of men who had successfully cultivated it. He was an ardent and enthusiastic student of nature, as well as of books, and this probably hastened the event which the scientific world has now to deplore."

Miscellanea.

New Levelling Instrument.—A new instrument has just been patented by Mr. W. Gillespie, of Torbanehill, Bathgate, for the purpose of taking the surface of slopes, railway gradients, the dip or rise of the bottom of water channels, and generally all levelling and sloping operations known in civil engineering. The instrument, which has been denominated "the inclinometer," is one of great simplicity, and may be applied by the ordinary labourer. It is constructed in the form of a parallelogram. The bottom parallel being placed upon any slope, the upper parallel necessarily presents to the eye the amount and direction of that slope. To measure the amount of slope, an additional limb or parallel is hinged, at one end, to the top bar or parallel of the parallelogram. From the other end of this addition depends a plummet by a cord or wire passing vertically down the graduated front of an additional side bar or limb of the parallelogram, fixed at right angles to the moveable parallel above. This moveable limb being raised from the parallel position in which it reposes from the upper bar of the inclinometer, to a position perfectly horizontal according to the plummet, the space intervening betwixt the two top bars, as marked off on the graduated or vertical side, is the rate of slope to be ascertained. The bottom and top parallels being thrown from the due level in trying the slope, and the due level restored in the case of the moveapar, its depending or vertical limb thus shows the difference—the two constituting the elements of a rectangle the same as the instrument itself, only applied to the true level, whilst the instrument is applied to the slope. The difference thus evinced must therefore be the exact rate of slope, or deviation from the level; and the instrument is capable of being fixed to that rate of slope by screwing to the immoveable top bar the sector attached to the moveable one.

Town Hall, Chester.—On Friday last the town council met to receive tenders for the complete repair and restoration of the Exchange Building and Town-hall. The following were the tenders received:—

Thomas Hughes	£2,128	0	0
Thomas Dean	2,236	0	0
Poole and Jones	2,307	17	0

The estimate of the corporation surveyor was 2,107*l.* The Hall is not by any means an old one, as it was commenced in the year 1695, and completed in 1699. In 1766, in consequence of some complaints as to its stability, the area underneath being open, and the Town-hall being supported on pillars and arches, it was strengthened by forming shops, &c. at the angles, and by running walls the length of the building on the western sides, which have now been converted into police-office, cells, &c. It is intended to take down the western and part of the north front, which have given way, restore the stonework and brickwork, strengthen the roof, and thoroughly paint and beautify the exterior and interior of the Exchange and Town Hall. The works are expected to occupy eighteen months.

Archæological Researches at Pevensey Castle.—The Earl of Burlington, on the application of Mr. Lower, of Lewes, having given the necessary permission, it is proposed to excavate within the castrum by removing the accumulated soil, by which, it is presumed, many of its architectural features are concealed. Mr. Roach Smith and Mr. Lower have engaged to receive subscriptions, and to report to the subscribers on the progress made. When Mr. Smith was engaged in his researches at Lymne, the South-Eastern Company franked his journeys between that place and London; and we are pleased to learn that the London and Brighton Railway directors have, in a like spirit, granted Mr. Lower a "pass" for six months.

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